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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/614,369	07/12/2000	David Mun-Hien Choy	AM9-99-0209	2248

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06/19/2003

EXAMINER

WOO, ISAAC M

ART UNIT PAPER NUMBER

2172

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/614,369

Applicant(s)

CHOY ET AL.

Examiner

Isaac M Woo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Reopening of Prosecution – New Ground of Rejection After Appeal

1. Prosecution is being responded in accordance with MPEP 1208.02 as follows:
2. In view of the appeal brief filed on April 03, 2003, PROSECUTION IS HEREBY REOPENED. New ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

3. Claims are 1-14 are pending (claims 15-19 are canceled).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al (U.S. Patent No. 5,991,776) in view of Gusack (U.S. Patent No. 6,112,209).

With respect to claim 1, Bennett discloses, the system for providing referential integrity (col. 3, lines 30-51, col. 9, lines 45-67 to col. 10, lines 1-11), RDBMS (col. 3, lines 30-51, col. 5, lines 24-26) providing referential integrity (col. 3, lines 30-51, col. 9, lines 45-67 to col. 10, lines 1-11, 388, FIG. 3H) for homogenous links, see (FIG. 1C, col. 7, lines 28-67 to col. 8, lines 1-67 to col. 1-45, Note: the "homogeneous link" defined by applicant in specification (page 1, lines 18-19 to page 2, line 1) that all links point to tuples in a single predetermined target table. And Bennett (180, index or key, FIG. 1C) points to the single predetermined database table (170, FIG. 1C). Bennett discloses the software layer on top of the RDBMS for causing the RDBMS to provide referential integrity, see (FIG. 1B, FIG. 3H, software "Paradox for window has program module that runs on window software application shares with RDBMS functions to handle referential integrity, which is different software layer than RDBMS and RDBMS provides relational

database functions to Paradox, which means that Paradox runs on top of the RDBMS). Bennett discloses the software layer maintaining at least one data structure useful in ensuring referential integrity, see (col. 3, lines 32-51, col. 9, lines 45-67 to col. 10, lines 1-11, 388, FIG. 3H). Bennett discloses referential integrity for homogeneous links, see (FIG. 1C, col. 7, lines 28-67 to col. 8, lines 1-67 to col. 1-45). Bennett does not explicitly disclose the referential integrity for heterogeneous links. However, Gusack discloses the referential integrity (col. 3, lines 59-67 to col. 4, lines 1-15, col. 10, lines 41-59) for heterogonous links, see (FIG. 22, FIG. 23, col. 23, lines 48-67 to col. 24, lines 1-67 to col. 25, lines 1-37, Note: the "heterogeneous link" defined by applicant in specification (page 2, line 7-9) that links to multiple predetermined target table. And Gusack discloses linking array table links (2215, FIG. 22) to multiple predetermined target table (2221, 2227, 2233 and 2239)). Therefore, it would have been obvious a person having ordinary skill in the art the time invention was made to combine the referential integrity for heterogeneous links of the system of Gusack with the system of Bennett to provide referential integrity for heterogeneous links. Because the referential integrity for heterogeneous links assures that the group of fields on database table matches the values in the key of another multiple tables.

With respect to claim 2, Bennett discloses that the software layer maintains at least one table, see (col. 2, lines 35-40).

With respect to claim 3, Bennett discloses that the table is accessed upon an attempted deletion or updating of a tuple references by a link, and the attempted deletion or updating is selectively disallowed base on the table, see (col. 14, lines 34-60).

With respect to claim 4, Bennett discloses that the software layer includes at least one stored procedure accessible by an application to insert, update, or delete a tuple while ensuring referential integrity in heterogeneous links associated with the tuple, see (col. 14, lines 34-60).

6. Claims 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gusack (U.S. Patent No. 6,112,209) in view of Bennett et al (U.S. Patent No. 5,991,776).

With respect to claims 5 and 11, Gusack discloses, providing at least one heterogonous scoped link table, see (FIG. 22, FIG. 23, col. 23, lines 48-67 to col. 24, lines 1-67 to col. 25, lines 1-37, Note: the "heterogeneous link" defined by applicant in specification (page 2, line 7-9) that links to multiple predetermined target table. And Gusack discloses linking array table links (2215, FIG. 22) to multiple predetermined target table (2221, 2227, 2233 and 2239)), at least one table having a heterogeneously scoped link column, see (FIG. 22, FIG. 23, col. 23, lines 48-67 to col. 24, lines 1-67 to col. 25, lines 1-37), the heterogeneous scoped link table being associated with the

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heterogeneously scoped link column (col. 50-67 to col. 28, lines 1-20), accessing the HSL table to ensure referential integrity, pointing to no tuple, in an RDBMS, see (col. 50-67 to col. 28, lines 1-20). Gusack does explicitly disclose the Non-RDBMS (software layer not part of RDBMS) element communicating with at least one RDBMS. However, Bennett discloses the Non-RDBMS element, software layer not part of RDBMS, (software paradox), Note: FIG. 1B, FIG. 3H, software "Paradox for window" has program module that runs on window software application shares with RDBMS functions to handle referential integrity, which is different software layer than RDBMS and RDBMS provides relational database functions to Paradox, which means that Paradox runs on top of the RDBMS and communicates with RDBMS. Therefore, it would have been obvious a person having ordinary skill in the art the time invention was made to combine the Non-RDBMS element (software layer not part of RDBMS) communicating with at least one RDBMS of the system of Gusack with the system of Bennett to provide referential integrity for heterogeneous links with RDBMS. Because different layer of software "Paradox" for window has program module that runs on window software application shares with RDBMS functions to handle referential integrity, which provides efficiently managing of referential integrity of data links to a user using user-friendly graphical user interface based on RDBMS.

With respect to claim 6, Gusack discloses that the HSL table is accessed when a link attribute is sought to be changed, see (col. 10, lines 41-67 to col. 11, lines 1-45).

With respect to claims 7 and 13, Gusack discloses that the HSL table is accessed when a tuple is sought to be changed or deleted, see (col. 10, lines 41-67 to col. 11, lines 1-45).

With respect to claim 8, Gusack discloses that that the HSL table is established by an RI table, see (col. 10, lines 41-67 to col. 11, lines 1-45).

With respect to claims 9 and 12, Gusack discloses that at least one trigger useful in selectively disallowing operations, see (col. 13, lines 52-67 to col. 14, lines 1-30).

With respect to claims 10 and 14, Gusack discloses that at least one procedure accessible by an application to insert, update, or delete a tuple while ensuring referential integrity in heterogeneous links associated with the tuple, see (col. 10, lines 41-67 to col. 11, lines 1-45).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Carhart et al (U.S. Patent 5,511,186) discloses the system for performing search and retrieval operations over multiple databases, the system and methods being suitable for use in combination with databases of different kinds managed by different

database management systems, the system and methods also being suitable for use in combination with databases resident on different computers in a computer network environment. The system and methods in their simplest application search each of a pair of database segments incrementally, using the incremental results of one search to direct the processing of the other search. The methods may be nested, and the system may be used in multiple instances, to effect searches on combinations of any number of database segments.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac M Woo whose telephone number is (703) 305-0081. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y Vu can be reached on (703) 305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

IMW
June 13, 2003

Shahid Al Alam
SHAHID AL ALAM
PATENT EXAMINER